REAL-TIME INFORMATION SERVICE SYSTEM USING TITLE BAR, TASK BAR AND TRAY CLOCK OF WINDOWS

Technical Field

The present invention relates in general to a real-time information service display method, and more particularly to a real-time information service system using Windows that is an operating system of a personal computer, wherein information received from an information server is displayed in real time on a title bar, task bar and tray clock of an active window of the Windows, so that a user can look up new information on the personal computer at any time without separate operations while he or she conducts other work with the computer in his office or home.

Background Art

It is common that most people acquire new information from press media or broadcasting media. At the present, some people obtain new information from cellular phones or information service media that provide an additional service such as a telephone information service.

Further, persons may make inquiries about new information from many cyber broadcasting stations or a variety of Internet information services over communication.

However, information such as a news flash from the press media or broadcasting media is disadvantageous in that it is small in amount and is not provided in real time. Further, information from the cellular phones is

disadvantageous in that it is provided on small liquid crystal display screens of the cellular phones only when users apply for the additional service. As a result, it is inconvenient for the users to make inquiries about and search for information through the cellular phones.

Furthermore, in real-time information service systems now provided by many information service companies, users must search for desired information by gaining access to hosts providing associated services or by using programs such as a Web browser. In this regard, for information searching, the users have to suspend their current work or process it in parallel with the searching operation.

Disclosure of the Invention

Therefore, the present invention has been made in view of the above problems, and it is an object of the present invention to provide a real-time information display method which is capable of receiving real-time information from an information server, storing the received information in a temporary storage unit and displaying the stored information on a title bar, task bar and tray clock of a Windows screen of a personal computer, so that a user can simply and conveniently acquire new information each time the new information is provided from the information server.

In accordance with the present invention, the above and other objects can be accomplished by a provision of a real-time information service system using a title bar, task bar and tray clock of Windows, comprising means for displaying information received from a real-time information server on the title bar in real time; means for displaying the information received from the real-time

information server on the task bar in real time; and means for displaying the information received from the real-time information server on the tray clock in real time.

Preferably, the above means for displaying the information received from the real-time information server on the title bar in real time may be programmed to extract a handle value of an active window, replace title bar information of the active window with the information received from the real-time information server, restore title bar information of a current window into the original state if the active window is changed from the current window to a different window and provide a part for controlling the type of registered information and real-time display information, in the form of an icon on a tray of a Windows system for the user's convenience, thereby allowing a user to control the type of desired information according to his or her preference using the provided tray icon.

Preferably, the above means for displaying the information received from the real-time information server on the task bar in real time may be programmed to additionally provide a window for display of real-time information from the real-time information server on the task bar, display the real-time information from the real-time information server in the provided window and allow a user to control the type of registered information and real-time display information by clicking on the task bar with a right button of a mouse, thereby providing a convenience to the user.

Preferably, the above means for displaying the information received from the real-time information server on the tray clock in real time may be programmed to describe details of an item currently displayed on the tray clock in a Windows tool description section if a mouse is positioned on the tray clock, display a general information query and transaction picture on the tray clock if a

user one-clicks on the tray clock and, if the user double-clicks on the tray clock, delete the general information query and transaction picture and display a Windows date, time and registered information picture on the tray clock.

Brief Description of the Drawings

The above and other objects, features and other advantages of the present invention will be more clearly understood from the following detailed description taken in conjunction with the accompanying drawings, in which:

Figs. 1a, 1b and 1c are flowcharts illustrating the operation of a real-time information service system which displays information on a title bar of a Windows screen of a personal computer in accordance with the preferred embodiment of the present invention;

Figs. 2a, 2b and 2c are flowcharts illustrating the operation of the real-time information service system which displays information on a task bar of the Windows screen in accordance with the preferred embodiment of the present invention; and

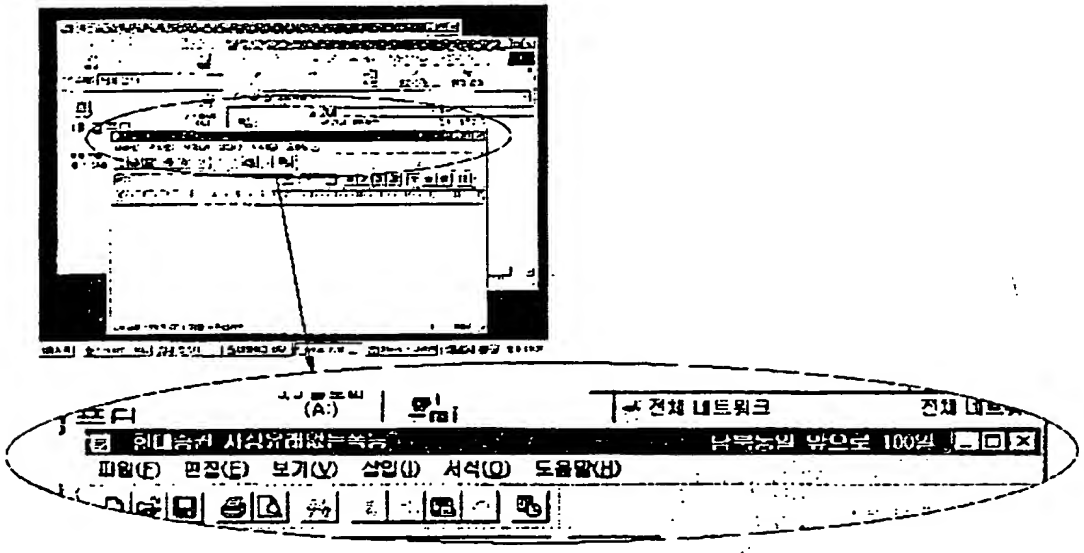
Figs. 3a and 3b are flowcharts illustrating the operation of the real-time information service system which displays information on a tray clock of the Windows screen in accordance with the preferred embodiment of the present invention.

Best Mode for Carrying Out the Invention

Figs. 1a, 1b and 1c are flowcharts illustrating the operation of a real-time information service system which displays information on a title bar of a Windows screen of a personal computer in accordance with the preferred

embodiment of the present invention. The below example 1 shows the display of information on the title bar of the Windows screen by the real-time information service system of the present invention.

EXAMPLE 1



As in the example 1, information is sent and displayed in real time on the title bar. To this end, the real-time information service system of the present invention is programmed to perform the following steps, or the step S1 of registering a real-time information service icon on a tray of a Windows system, the step S2 of setting up items to be displayed on the title bar and other conditions by a user, the step S3 of entering an identification (ID) and password in a real-time information server, the steps S4 and S5 of logging in to the real-time information server, the step S6 of monitoring task change and window transition events, the step S7 of detecting variations in an active window, the step S8 of performing processes corresponding respectively to the detected

variations in the active window, the step S9 of receiving a variety of real-time information from the real-time information server, the step S10 of searching for the active window and extracting a handle value corresponding to the searched window, the step S11 of displaying the information received from the real-time information server on the title bar of the active window with the extracted handle value according to the conditions set up by the user, the steps S12 and S13 of determining whether the user has clicked on the registered real-time information service icon on the tray, the step S14 of displaying a menu window, the step S15 of selecting registered information or help information in the displayed menu window, the step S16 of outputting a preset message, the step S20 of editing the contents of the title bar, the step S25 of setting output forms, the step S21 of ending the connection to the real-time information server, the step S24 of, if the connection to the real-time information server is not ended, returning to the above step S6 of monitoring the task change and window transition events, and the steps S22 and S23 of, if the connection to the real-time information server is ended, ending an associated program and restoring the current values to the original values. By performing these steps, the real-time information service system can display a variety of information and data from the real-time information server on the title bar of the active window of the Windows in real time.

At the step S1 of registering the real-time information service icon on the tray, the system provides a part for controlling the type of registered information and real-time display information, in the form of an icon on the tray of the Windows system for the user's convenience. As a result, the user can control the type of desired information according to his or her preference using the provided tray icon.

At the step S2 of setting up the items to be displayed on the title bar and other conditions by the user, an additional service manager provides an alarm such as a sound or picture change when given conditions are identical to the conditions set up by the user.

At the step S3 of entering the ID and password in the real-time information server, the user enters his or her ID and password in the real-time information server so that news or advertisements from the server can be provided on the title bar.

At the steps S4 and S5 of logging in to the real-time information server, the user logs in to the real-time information server by entering his or her ID and password in the server. The user can receive a variety of information from the real-time information server by logging in to the server.

At the step S6 of monitoring the task change and window transition events, the system monitors an event where the user moves a task from one window, for example, a Windows searcher window to a different window, for example, a control panel window.

At the step S7 of detecting the variations in the active window, the system detects the variations in the active window such as a transition of the active window from one window, for example, the Windows searcher window to a different window, for example, the control panel window. Here, the active window signifies a window that performs a task currently given by the user and displays real-time information from the real-time information server.

At the step S8 of performing the processes corresponding to the detected variations in the active window, if the active window is changed in size, it is changed from one window to another window, the user changes a title bar in position using a mouse, or a new icon is registered and located on the tray, then

the system changes the title bar in size and sets the range of information display according to the changed size of the title bar.

At the step S9 of receiving the real-time information from the real-time information server, the system receives a variety of information, such as stock market information, advertisements, news flashes, character broadcasts, etc., from the real-time information server.

At the step S10 of searching for the active window and extracting the handle value corresponding to the searched window, a task manager is adapted to extract the handle value of the active window.

At the step S11 of displaying the information received from the real-time information server on the title bar of the active window with the extracted handle value according to the conditions set up by the user, the system searches for an item in a menu window, selected by the user using the mouse, and displays the received information according to the selected item and the set-up conditions.

At the steps S12 and S13 of determining whether the user has clicked on the registered real-time information service icon on the tray, the system determines whether the user has clicked on the tray icon for controlling the type of real-time information. Upon determining that the user has not clicked on the tray icon, the system returns to the above step S6 of monitoring the task change and window transition events.

At the step S14 of displaying the menu window, the system displays the menu window, which contains a variety of menus such as registered information, help information, title bar edition, real-time information service connection, connection end, etc.

At the step S15 of selecting the registered information or help

information in the displayed menu window, the system outputs a preset message if the user selects the registered information or help information in the displayed menu window. Otherwise, the system proceeds to the step S20 of editing the contents of the title bar.

At the step S16 of outputting the preset message, the system displays the contents of preset information from an information source.

At the step S20 of editing the contents of the title bar, the system edits and provides output forms of various information on the title bar.

At the step S25 of setting the output forms, the system sets output forms of information displayed on the title bar, for example, a character stream expression such as an electric stock market board (i.e., a ticker), a character blinking expression, etc.

At the step S21 of ending the connection to the real-time information server, if the user ends the connection to the real-time information server under the condition that any output form is not provided at the above step S20 of editing the contents of the title bar, then the system ends an associated program. However, unless the user ends the connection to the real-time information, the system returns to the above step S6 of monitoring the task change and window transition events.

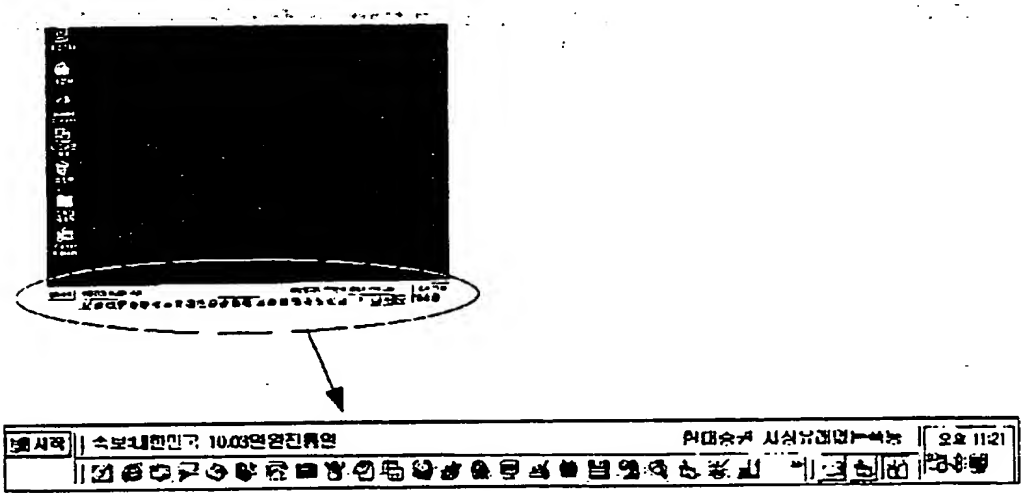
At the step S24 of, if the connection to the real-time information server is not ended, returning to the above step S6 of monitoring the task change and window transition events, the system extracts a handle value of the active window, compares the extracted handle value with that of a window in which information is currently displayed and determines from the compared result whether there is a variation in the handle value of the active window. If there is a variation in the handle value of the active window, the system changes this

handle value such that information is always displayed on the title bar of the active window.

At the steps S22 and S23 of, if the connection to the real-time information server is ended, ending the associated program and restoring the current values to the original values, if a sequence of predetermined steps are completed, then the system ends the associated program and restores the current values to the original values.

Figs. 2a, 2b and 2c are flowcharts illustrating the operation of the real-time information service system which displays information on a task bar of a Windows screen of a personal computer in accordance with the preferred embodiment of the present invention. The below example 2 shows the display of information on the task bar of the Windows screen by the real-time information service system of the present invention.

EXAMPLE 2



As in the example 2, information is sent and displayed in real time on the

task bar. To this end, the real-time information service system of the present invention is programmed to perform the following steps, or the step S30 of creating an additional tool bar window on the task bar, the step S31 of setting up items to be displayed on the task bar and other conditions by a user, the step S32 of entering an ID and password in a real-time information server, the steps S33 and S34 of logging in to the real-time information server, the step S35 of determining whether the user has operated the left button of a mouse, the step S36 of gaining access to the real-time information server and providing detailed information from the server to the screen, the step S37 of receiving a variety of real-time information from the real-time information server, the step S40 of displaying the information received from the real-time information server on the task bar according to the conditions set up by the user, the step S41 of determining whether the user has operated the right button of the mouse, the step S42 of displaying a menu window, the step S43 of selecting registered information or help information in the displayed menu window, the step S44 of outputting a preset message, the step S50 of editing the contents of the task bar, the step S55 of setting output forms, the step S51 of ending the connection to the real-time information server, the step S52 of, if the connection to the real-time information server is not ended, returning to the above step S35 of determining whether the user has operated the left button of the mouse, and the steps S53 and S54 of, if the connection to the real-time information server is ended, ending an associated program and restoring the current values to the original values. By performing these steps, the real-time information service system can display a variety of information and data from the real-time information server on the task bar in real time.

At the step S30 of creating the additional tool bar window on the task

bar, the system creates the additional tool bar window on the bottom of a monitored picture and, in turn, the task bar above the tool bar window.

At the step S31 of setting up the items to be displayed on the task bar and other conditions by the user, an additional service manager provides an alarm such as a sound or picture change when given conditions are identical to the conditions set up by the user.

At the step S32 of entering the ID and password in the real-time information server, the user enters his or her ID and password in the real-time information server so that news or advertisements from the server can be provided on the task bar.

At the steps S33 and S34 of logging in to the real-time information server, the user logs in to the real-time information server by entering his or her ID and password in the server. The user can receive a variety of information from the real-time information server by logging in to the server.

At the step S35 of determining whether the user has operated the left button of the mouse, the system displays a menu window containing a variety of menus such as registered information, help information, task bar edition, real-time information service connection, connection end, etc. such that the user clicks on a desired item in the displayed menu window with the left button of the mouse. Then, the system detects the item selected by the user and executes a command associated with the detected item.

At the step S36 of gaining access to the real-time information server and providing detailed information from the server to the screen, the system gains access to the real-time information server and displays desired details from the server on the screen.

At the step S37 of receiving the real-time information from the real-time

information server, the system receives a variety of information, such as stock market information, advertisements, news flashes, character broadcasts, etc., from the real-time information server.

At the step S40 of displaying the information received from the real-time information server on the task bar according to the conditions set up by the user, the system determines whether the user has accessed the real-time information server via not an Internet dedicated line but a modem and then displays news, stock market quotations, sports, government, economy and other information from the server on the task bar if the user has accessed the server via the modem.

At the step S41 of determining whether the user has operated the right button of the mouse, if the user operates the right button of the mouse on a desired tool bar window or clicks on an icon registered on a tray, then the system controls the type of registered information and real-time display information.

At the step S42 of displaying the menu window, the system displays the menu window, which contains a variety of menus such as registered information, help information, task bar edition, real-time information service connection, connection end, etc.

At the step S43 of selecting the registered information or help information in the displayed menu window, the system outputs a preset message if the user selects the registered information or help information in the displayed menu window. Otherwise, the system proceeds to the step S50 of editing the contents of the task bar.

At the step S44 of outputting the preset message, the system displays the contents of preset information from an information source.

At the step S50 of editing the contents of the task bar, the system edits and provides output forms of various information on the task bar.

At the step S55 of setting the output forms, the system sets output forms of various information displayed on the task bar, for example, a character stream expression such as an electric stock market board, a character blinking expression, etc.

At the step S51 of ending the connection to the real-time information server, if the user ends the connection to the real-time information server under the condition that any output form is not provided at the above step S50 of editing the contents of the task bar, then the system ends an associated program. However, unless the user ends the connection to the real-time information, the system returns to the above step S35 of determining whether the user has operated the left button of the mouse.

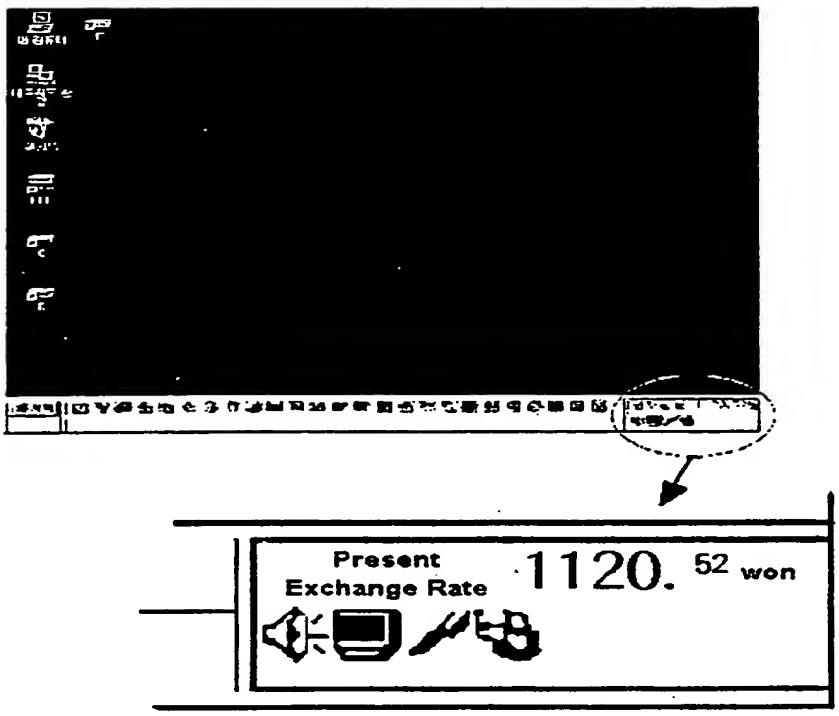
At the step S52 of, if the connection to the real-time information server is not ended, returning to the above step S35 of determining whether the user has operated the left button of the mouse, the system acquires real-time information from the real-time information server and determines whether the user has operated the left button of the mouse.

At the steps S53 and S54 of, if the connection to the real-time information server is ended, ending the associated program and restoring the current values to the original values, if a sequence of predetermined steps are completed, then the system ends the associated program and restores the current values to the original values.

Figs. 3a and 3b are flowcharts illustrating the operation of the real-time information service system which displays information on a tray clock of a Windows screen of a personal computer in accordance with the preferred embodiment of the present invention. The below example 3 shows the display of information on the tray clock of the Windows screen by the real-time

information service system of the present invention.

EXAMPLE 3



As in the example 3, information is sent and displayed in real time on the tray clock. To this end, the real-time information service system of the present invention is programmed to perform the following steps, or the step S60 of setting up items to be displayed on the tray clock and other conditions by a user, the step S61 of entering an ID and password in a real-time information server, the steps S62 and S63 of logging in to the real-time information server, the step S64 of receiving a variety of real-time information from the real-time information server, the step S65 of displaying the information received from the real-time information server on the tray clock, the step S70 of determining whether a mouse is positioned on the tray clock, the step S77 of describing

details of an item currently displayed on the tray clock in a Windows tool description section, the step S71 of determining whether the user has double-clicked on the tray clock with the left button of the mouse, the step S76 of executing Windows date, time and registered information programs, the step S72 of determining whether the user has clicked on the tray clock with the left button of the mouse, the step S73 of ending a tray system, and the steps S74, S75 and S76 of executing and ending general information query and transaction programs. By performing these steps, the real-time information service system can display a variety of information and data from the real-time information server on the tray clock in real time.

At the step S60 of setting up the items to be displayed on the tray clock and other conditions by the user, the user selects a real-time information server and sets up associated conditions to display a variety of information from the server on the tray clock, which is located at the rightmost position of a task bar.

At the step S61 of entering the ID and password in the real-time information server, the user enters his or her ID and password in the real-time information server so that information from the server can be provided on the tray clock.

At the steps S62 and S63 of logging in to the real-time information server, the user logs in to the real-time information server by entering his or her ID and password in the server. The user can receive a variety of information from the real-time information server by logging in to the server.

At the step S64 of receiving the real-time information from the real-time information server, the system searches information from the real-time information server for desired information and downloads the searched information.

At the step S65 of displaying the information received from the real-time information server on the tray clock, the system displays news, stock market quotations and other information from the real-time information server in character form. The system further provides an alarm such as a color, sound or picture change when given conditions are identical to the conditions set up by the user.

At the step S70 of determining whether the mouse is positioned on the tray clock, the system describes details of an item currently displayed on the tray clock in a Windows tool description section if the mouse is positioned on the tray clock. If the mouse moves from the tray clock, then the system proceeds to the log-in step. In the case where the mouse is not positioned on the tray clock, the system proceeds to the step S71 of determining whether the user has double-clicked on the tray clock with the left button of the mouse.

At the step S77 of describing the details of the item currently displayed on the tray clock in the Windows tool description section, the system describes the details of the item currently displayed on the tray clock in the form of a Windows tool tip.

At the step S71 of determining whether the user has double-clicked on the tray clock with the left button of the mouse, the real-time information service system ends a tray system if the user has double-clicked on the tray clock with the left button of the mouse. However, if the user has not double-clicked on the tray clock with the left button of the mouse, the real-time information service system proceeds to the log-in step.

At the step S76 of executing the Windows date, time and registered information programs, if the user double-clicks on the tray clock with the left button of the mouse, then the system receives information from the real-time

information server over the Internet, transforms the received information into the Windows date, time and registered information programs and executes the transformed programs.

At the step S72 of determining whether the user has clicked on the tray clock with the left button of the mouse, the user can change the above display method or associated registered information according to his or her preference.

At the step S73 of ending the tray system, the system executes general information query and transaction programs if the tray system is not ended.

At the steps S74, S75 and S76 of executing and ending the general information query and transaction programs, the system installs and executes the general information query and transaction programs to inquire about desired information and conduct transactions and then ends those programs if the query and transactions are completed.

Industrial Applicability

As apparent from the above description, the present invention provides a real-time information service system which is capable of displaying real-time information on a title bar, task bar and tray clock of an active window of a Windows system, so that a user can conveniently search for the real-time information without interferences with other programs. Therefore, this invention is very usefully applicable to computer application programming technical fields.

The present real-time information service system provides, rather than simple contents such as titles of programs, information useful to modern persons using the Internet and computers in daily life. Therefore, the present invention

is very useful in providing users with a variety of real-time information such as stock market quotations, sports, government, economy, news flashes, advertisements of simple phrases or sentences, character broadcasts, etc. provided from companies and public institutions having real-time information servers.

Although the preferred embodiments of the present invention have been disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.